

Amendments to the Claims

1. (currently amended) A method in a radio frequency identification (RFID) tag device for controlling an operating state of the tag device using a reader, wherein the operating state is chosen from a plurality of possible states, comprising the steps of:

(a) receiving a symbol from the reader when the operating state is a present state, wherein a first pulse width for the received symbol represents a first data value, and a second pulse width for the received symbol represents a second data value;

(b) determining a new state for the operating state based upon the received symbol and present state; and

(c) transitioning the operating state from the present state to the determined new state.

2. (original) The method of claim 1, wherein step (c) includes the step of:
transitioning the operating state from the present state to the determined new state without receiving any symbols from the reader other than in step (a).

3. (original) The method of claim 2, further comprising the step of:

(d) repeating steps (a)-(c).

4. (original) The method of claim 1, wherein step (a) includes the step of:

determining the received symbol to be a data "0," data "1," or data
"NULL."

5. (original) The method of claim 1, wherein step (c) includes the step of:
transmitting a symbol from the tag device to the reader.

6. (original) The method of claim 5, wherein the symbol transmitted to the
reader includes a bit of an identification number, wherein said transmitting step includes
the step of:
transmitting the bit of the identification number.

7. (original) The method of claim 1, further comprising the step of:
(d) performing steps (a)-(c) regardless of whether the reader is
performing a general read interrogation or a specific read interrogation.

8. (original) A method in a radio frequency identification (RFID) tag device for
controlling an operating state of the tag device using a reader, comprising the steps of:
receiving a symbol from the reader; and
determining a new state for the operating state of the tag device, wherein
said determining step includes the steps of:
(a) allowing the operating state to remain in a first state if the
operating state is the first state when the symbol is received,

(b) transitioning the operating state to the first state if the operating state is a second state when the symbol is received,

(c) transitioning the operating state to a third state if the operating state is a fourth state when the symbol is received, and

(d) transitioning the operating state to the first state if the operating state is a fifth state when the symbol is received.

9. (original) The method of claim 8, wherein the first state is a command state, wherein step (a) includes the step of:

allowing the operating state to remain in the command state if the operating state is the command state when the symbol is received.

10. (original) The method of claim 8, wherein the first state is a command state and the second state is a superposition state, wherein step (b) includes the step of:

transitioning the operating state to the command state if the operating state is the superposition state when the symbol is received.

11. (original) The method of claim 8, wherein the third state is a dormant state and the fourth state is a tree traversal state, wherein step (c) includes the step of:

transitioning the operating state to the dormant state if the operating state is the tree traversal state when the symbol is received.

12. (original) The method of claim 8, wherein the first state is a command state and the fifth state is a mute state, wherein step (d) includes the step of:

transitioning the operating state to the command state if the operating state is the mute state when the symbol is received.

13. (original) The method of claim 8, wherein the received symbol is a "NULL" symbol, wherein the receiving step includes the step of:

receiving a "NULL" symbol from the reader.

14. (currently amended) A method in a radio frequency identification (RFID) tag device for controlling an operating state of the tag device from a reader, comprising the steps of:

receiving a symbol from the reader; and

determining a new state for the operating state of the tag device, wherein said determining step includes the steps of:

(a) if the operating state is a first state when the symbol is received in said receiving step, performing the following steps:

(1) transitioning the operating state to a ~~fourth~~ second state if a value of the received symbol is a first data value, and

(2) transitioning the operating state to a ~~second~~ third state if the value of the received symbol is a second data value;

(c) allowing the operating state to remain the ~~second~~ third state if the operating state is the ~~second~~ third state when the symbol is received in said receiving step;

(d) if the operating state is the ~~fourth~~ second state when the symbol is received in said receiving step, performing the following steps:

[[(3)]] (1) allowing the operating state to remain the ~~fourth~~ second state if the received symbol matches a present tag identification bit, and

[[(4)]] (2) transitioning the operating state to a ~~fifth~~ fourth state if the received symbol does not match the present tag identification bit; and

(e) allowing the operating state to remain the ~~fifth~~ fourth state if the operating state is the ~~fifth~~ fourth state when the symbol is received in said receiving step.

15. (currently amended) The method of claim 14, wherein the first state is a command state and the ~~fourth~~ second state is a tree traversal state, wherein step (a)(1) includes the step of:

transitioning the operating state to a tree traversal state if a value of the received symbol is a first data value.

16. (currently amended) The method of claim 14, wherein the first state is a command state and the ~~second~~ third state is a superposition state, wherein step (a)(2) includes the step of:

transitioning the operating state to a superposition state if the value of the received symbol is a second data value.

17. (currently amended) The method of claim 14, wherein the ~~second~~ third state is a superposition state, wherein step (c) includes the step of:

allowing the operating state to remain the superposition state if the operating state is the superposition state when the symbol is received in said receiving step.

18. (currently amended) The method of claim 14, wherein the ~~fourth~~ second state is a tree traversal state, wherein step [(d)(3)] (d)(1) includes the step of:

allowing the operating state to remain the tree traversal state if the received symbol matches a present tag identification bit.

19. (currently amended) The method of claim 14, wherein the ~~fourth~~ second state is a tree traversal state and the ~~fifth~~ fourth state is a mute state, wherein step [(d)(3)] (d)(1) includes the step of:

transitioning the operating state to a mute state if the received symbol does not match the present tag identification bit.

20. (currently amended) The method of claim 14, wherein the ~~fifth~~ fourth state is a mute state, wherein step (e) includes the step of:

allowing the operating state to remain the mute state if the operating state is the mute state when the symbol is received in said receiving step.

21. (currently amended) The method of claim 14, wherein the first data value is a “0” symbol and the ~~fourth~~ second state is a tree traversal state, wherein step (a)(1) includes the step of:

[[(1)]] if a value of the received symbol is a “0” symbol, transitioning the operating state to the tree traversal state.

22. (currently amended) The method of claim 14, wherein the second data value is a “1” symbol and the ~~second~~ third state is a superposition state, wherein step (a)(2) includes the step of:

[[(2)]] if the value of the received symbol is a “1” symbol, transitioning the operating state to the superposition state.

23-65. (canceled)

66. (new) The method of claim 14, wherein in step (d), if the operating state is the second state when the symbol is received in said receiving step, further performing:

transitioning the operating state to a fifth state if the received symbol is a third data value.

67. (new) The method of claim 66, wherein the second state is a tree traversal state and the fifth state is a dormant state, wherein step (d)(3) includes the step of:

transitioning the operating state to the dormant state if the received symbol is a third data value.

68. (new) The method of claim 66, wherein said determining step further comprises:

(f) if the operating state is the fifth state when the symbol is received, transitioning the operating state to the first state when the symbol is received.

69. (new) The method of claim 68, wherein step (f) comprises:
transitioning the operating state to the first state through a sixth state when the symbol is received if the operating state is the fifth state when the symbol is received.

70. (new) The method of claim 69, wherein the first state is a command state, the fifth state is a dormant state, and the sixth state is a calibration state, wherein step (f) includes:

transitioning the operating state to the command state through the calibration state when the symbol is received if the operating state is the dormant state when the symbol is received.

71. (new) The method of claim 68, wherein said determining step further comprises:

(g) if the operating state is the sixth state, transitioning the operating state to the fifth state when an invalid signal is received.

72. (new) The method of claim 14, wherein said determining step further comprises:

(f) if the operating state is the third state when the symbol is received, transitioning the operating state to the first state if the value of the received symbol is a third data value.

73. (new) The method of claim 14, wherein in step (a), if the operating state is the first state when the symbol is received in said receiving step, further performing:

allowing the operating state to remain the first state if the value of the received symbol is a third data value.

74. (new) The method of claim 14, wherein step (e) comprises:

allowing the operating state to remain the fourth state if the operating state is the fourth state when the value of the received symbol is the first data value or the second data value.

75. (new) The method of claim 74, wherein in step (e), if the operating state is the fourth state when the symbol is received in said receiving step, further performing:

transitioning the operating state to the first state if the value of the received symbol is a third data value.